

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of	)
Lawrence G. Rodriguez, et al.	) Group: 3673
Serial No.: 10/647,967	)
Filed: August 26, 2003	)
Title: TURN-BUTTON WITH LEADING HELICAL	)
END PORTION	) Examiner: C. Boswell

**BRIEF OF APPELLANT**

MS APPEAL BRIEF - PATENTS  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This appeal is taken from the decision of the Examiner set forth in the final Office Action mailed January 21, 2009, finally rejecting claims 1-6 and 8-21, and the Advisory Action mailed April 13, 2009. Appellant timely filed a Notice of Appeal in this matter on June 19, 2009.

## **I. TABLE OF CONTENTS**

II. Real Party In Interest .....	Page 3
III. Related Appeals and Interferences.....	Page 4
IV. Status of Claims .....	Page 5
V. Status of Amendments .....	Page 6
VI. Summary of Claimed Subject Matter .....	Page 7
VII. Grounds of Rejection To Be Reviewed On Appeal .....	Page 11
VIII. Argument.....	Page 12
IX. Claims Appendix .....	Page 29
X. Evidence Appendix .....	Page 33
XI. Related Proceedings Appendix .....	Page 34

## **II. REAL PARTY IN INTEREST**

The real party in interest in this appeal is Newfrey, Inc., a corporation organized and existing under the laws of the State of Delaware, which owns the entire interest in this patent application as set forth in the underlying claimed invention.

### **III. RELATED APPEALS AND INTERFERENCES**

No related Appeals or Interferences are known to the Appellant.

#### **IV. STATUS OF CLAIMS**

Pending: 1-6 and 8-20.

Canceled: 7 and 21.

Allowed: None

Objected To: None

Rejected: 1-6 and 8-20.

Withdrawn from Consideration: None.

On Appeal: 1-6 and 8-20.

## **V. STATUS OF AMENDMENTS**

An Amendment was filed March 21, 2009, in response to the Final Office Action mailed January 21, 2009, and has been entered for purposes of appeal, as indicated in the Advisory Action of April 13, 2009. All previously submitted Amendments have been considered and entered.

## **VI. SUMMARY OF CLAIMED SUBJECT MATTER**

The present Summary of Claimed Subject Matter includes a summary of each claim, including reference to Appellant's specification by page and line number, and reference to Appellant's drawings.

1. A lockset (10), comprising: (Page 2, lines 21-24; Fig. 1)  
a lock mechanism (14) having an aperture (34); (Page 2, lines 30-33; Fig. 1)  
an operator (16); (Page 2, lines 22-24; Fig. 1) and  
a turn-button (12) mounted in said operator (16) during assembly of said lockset (10),  
(page 1, lines 8-15; page 2, line 24) said turn-button (12) including:  
a head portion (20); (Page 2, lines 25-26; Figs. 1 and 2) and  
a shaft (22) extending from said head portion (20), (Page 2, lines 25-25; Figs. 1 and 2)  
said shaft (22) having a leading helical end portion (26) that engages said aperture (34) of said  
lock mechanism (14). (Page 2, lines 27-28; Page 3, lines 8-13; Figs. 1 and 2)

2. The lockset (10) of claim 1, said leading helical end portion (26) having a plurality of  
leading helical surfaces (40) that taper and twist from a transition line (42) of said shaft (22)  
toward a tip end (44) of said shaft (22). (Page 3, lines 3-5; Figs. 1 and 2)

3. The lockset (10) of claim 2, wherein said plurality of leading helical surfaces (40)  
smoothly transition between adjacent helical surfaces (40). (Page 3, lines 5-7; Fig. 1)

4. A turn-button (12) for a lockset (10), comprising: (Page 2, lines 21-24; Fig. 1)  
a head portion (20); (Page 2, lines 25-26; Figs. 1 and 2) and

a shaft (22) extending from said head portion (20), (Page 2, lines 25-26; Figs. 1 and 2) said shaft (22) having a leading helical end tip (26, 44). (Page 2, lines 27-28; Page 3, lines 3-5; Figs. 1 and 2)

5. The turn-button (12) of claim 4, said leading helical end tip (26, 44) having a plurality of leading helical surfaces (40) that taper and twist from a transition line (42) of said shaft (22) toward a tip end (44) of said shaft (22). (Page 3, lines 3-5; Figs. 1 and 2)

6. The turn-button (12) of claim 5, wherein said plurality of leading helical surfaces (40) smoothly transition between adjacent helical surfaces (40). (Page 3, lines 5-7; Fig. 1)

7. (Canceled)

8. The lockset (10) of claim 1, said lock mechanism (14) including a rotatable actuator (32) having said aperture (34), wherein once said leading helical end portion (26) engages said aperture (34), a rotation of said turn-button (12) effects a corresponding rotation of said rotatable actuator (32) of said lock mechanism (14). (Page 2, lines 30-34; Page 3, lines 13-15; Figs. 1, 2 and 3)

9. A lockset (10) comprising: (Page 2, lines 21-24; Fig. 1)

a lock mechanism (14) including an actuator (32) having an aperture (34); (Page 2, lines 30-33; Fig. 1)

an operator (16); (Page 2, lines 22-24; Fig. 1)



a turn-button (12) mounted in said operator (16), said turn-button (12) including a shaft (22); (Page 2, lines 24-26; Figs. 1 and 2) and

means (26, 36, 40, 44) for facilitating self-alignment of said shaft (22) of said turn-button (12) with said aperture (34) of said lock mechanism (14) as said shaft (22) of said turn-button (12) is inserted into said aperture (34) of said lock mechanism (14), said means (26, 36, 40, 44) including a plurality of leading helical surfaces (40) that taper and twist from a transition line (42) of said shaft (22) toward a tip end (44) of said shaft (22). (Page 3, lines 3-15; Figs. 1, 2 and 3)

10. The lockset (10) of claim 9, wherein said plurality of leading helical surfaces (40) smoothly transition between adjacent helical surfaces (40). (Page 3, lines 5-7; Fig. 1)

11. The lockset (10) of claim 1, wherein said operator (16) is one of a door knob and a door lever, (Page 2, line 23; Fig. 1) said shaft (22) of said turn-button (12) extending from said head portion (20) through said one of said door knob and said door lever (16) to engage said aperture (34) of said lock mechanism (14). (Page 2, lines 25-33; Page 3, lines 8-15; Fig. 1)

12. The lockset (10) of claim 1, wherein a rotation of said turn-button (12) effects a corresponding rotation of said aperture (34) of said lock mechanism (14). (Page 2, lines 30-34; Page 3, lines 13-15; Figs. 1 and 2)

13. The lockset (10) of claim 1, wherein said aperture (34) of said lock mechanism (14) has a substantially rectangular shape. (Page 2, line 34-Page 3, line 2; Fig. 3)

14. The lockset (10) of claim 2, wherein a number of said plurality of leading helical surfaces (40) is greater than two. (Fig. 2)

15. The turn-button (12) of claim 4, wherein a perimeter (28) of an elongate portion (24) of said shaft (22) has a substantially rectangular shape. (Page 2, lines 27-29; Figs. 1 and 2)

16. The turn-button (12) of claim 5, wherein a number of said plurality of leading helical surfaces (40) is greater than two. (Fig. 2)

17. The lockset (10) of claim 9, wherein said operator (16) is one of a door knob and a door lever, said shaft (22) of said turn-button (12) extending through said one of said door knob and said door lever (16) to engage said aperture (34) of said lock mechanism (14). Page 2, lines 25-33; Page 3, lines 8-15; Fig. 1)

18. The lockset (10) of claim 9, wherein said aperture (34) of said lock mechanism (14) has a substantially rectangular shape. (Page 2, line 34-Page 3, line 2; Fig. 3)

19. The lockset (10) of claim 9, wherein a number of said plurality of leading helical surfaces (40) is greater than two. (Fig. 2)

20. The lockset (10) of claim 1, wherein said leading helical end portion (26) forms a plurality of side surfaces (40) of said shaft (22). (Page 3, line 9; Figs. 1 and 2)

21. (Canceled)

**VII. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

A. Claims 1-6, 8-10, 12-16 and 18-21 were rejected under 35 U.S.C. § 102(e) as being anticipated by Liu (U.S. Patent No. 6,925,844).

B. Claims 11 and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (U.S. Patent No. 6,925,844) in view of Hurdle (U.S. Patent No. 842,834).

## **VIII. ARGUMENT**

### **A. PENDING CLAIMS 1-6, 8-10, 12-16 AND 18-20 ARE NOT ANTICIPATED BY LIU (U.S. PATENT NO. 6,925,844) UNDER 35 U.S.C. § 102(e)**

In the Final Office Action of January 21, 2009 (hereinafter, the Final Office Action), claims 1-6, 8-10, 12-16 and 18-21 were rejected under 35 U.S.C. § 102(e) as being anticipated by Liu (U.S. Patent No. 6,925,844). Claim 21 was canceled in the Amendment filed March 21, 2009.

As set forth in MPEP 2131, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

For reasons set forth below, Appellant submits that now pending claims 1-6, 8-10, 12-16 and 18-20 are not anticipated by Liu under 35 U.S.C. § 102(e), and are patentable over Liu.

#### **1. LIU (U.S. PATENT NO. 6,925,844)**

Liu discloses a lock having a helical keyway and an accompanying key. Liu states that in order to overcome the shortcomings of conventional straight-shaped keyways, the Liu invention "advantageously provides a lock and key combination that poses tremendous difficulty for a lock breaker by not allowing the lock breaker to see all of the pin tumblers

in the keyway, which enhances lock security. Furthermore, the helical keyway of the lock of the present invention prevents the rod from successfully engaging the pin tumblers.” (Liu, column 1, lines 60-67).

Liu discloses a lock 100 and a corresponding key 200. The lock 100 comprises a lock housing or shell 102 and a key core 110 rotatably disposed therein. The shell 102 may take various shapes, such as a cylinder lock shell, a mortise lock shell, a rim lock shell, etc. The lock core 110 is provided with a pair of keyways 112 for receiving the mated key 200 therein and a positioning slot 114 in the center of the front end for facilitating insertion of the key 200. (Liu column 4, lines 55-65; Fig.1).

Liu discloses that the key 200 includes a shaft or “shank” in the form of “a shank 210”, and shank 210 is distinctly separate from the blade portion 230. (Liu Figs 1, 3 and 5; Liu column 5, lines 34-45) Also, it is the blade portion 230, and not shank 210, that includes “a pair of helical blades 236” (Liu, column 5, lines 63-66; see also, Liu, Fig. 5). Further, Liu identifies the structures of Liu Figs. 6A-6D as alternative structures for the “helical key blades” (Liu column 6, lines 51-67) e.g., blades 236’ (Fig. 6A), 236” (Fig. 6B), 236''' (Fig. 6C), and blades 236'''' and 236b'''' (Fig. 6D). With respect to the embodiments of Liu Figs. 6A and 6C, it is stated that “the key may have only one helical key blade” (Liu, column 6, lines 58-60).

Liu describes the spiraling element 236''' as a helical key blade having an elongated rectangular cross section (Liu column 6, lines 62-64). Liu Fig. 2B shows keyways 112 into which the spiraling key blades are inserted. The spiraling key blades are designed to follow respective keyways 112 so as to radially displace tumblers positioned in tumbler bores 120. (Liu Figs. 2A, 2B and 3; column 7, lines 53-58).

## 2. CLAIM 1 IS PATENTABLE

Claim 1 recites, in part, “a turn-button mounted in said operator during assembly of said lockset, said turn-button including: a head portion; and a shaft extending from said head portion, said shaft having a leading helical end portion that engages said aperture of said lock mechanism.” (Emphasis added).

In rejecting claim 1, the Examiner relies on the Liu lock 100 as corresponding to the recited “lock mechanism”, the key core 110 as corresponding to the recited actuator, the pair of keyways 112 and the positioning slot 114 as corresponding to the recited aperture, the core head 111 as corresponding to the recited “operator”, the key 200 as corresponding to the recited “turn-button”, the head driver 220 as corresponding to the head portion of the turn-button, the key blade portion 230 as corresponding to the recited “shaft”, and the helical key blade 236” as corresponding to the recited “leading helical tip”.

In the Final Office Action at page 5 (Response to Arguments second paragraph) the Examiner asserts that the key of Liu is a turn-button or turnpiece, since keys and turn-buttons or turnpieces both are used to actuate a lock or deadbolt. Appellant respectfully submits that the art is replete with the use of the term turn-button or turn-piece, and is not used to mean a key. Notwithstanding, the Examiner asserts patents 5,361,614; 5,140,843 and 3,630,053 as showing that it is known that keys are used as permanent turn-buttons or turn pieces. However, the present rejection under 35 U.S.C 102(e) is based only on anticipation by Liu (US 6,925,844). Appellant submits that the key 200 of Liu is not what is understood by one of ordinary skill in the art to be a turn-button (also sometimes spelled “turn button”, and also sometimes referred to as a turnpiece).

For example, the present application, as well as each of U.S. Patents 4,631,944; 5,317,889; 5,335,950; 5,441,318; 6,598,440; and 6,745,602 shows and describes a turn-button/turnpiece. The owners of these patents are variously Kwikset, Emhart or Newfrey LLC, who constitute a market share of about 60%. Accordingly, there is an extensive use of the terms turn-button/turnpiece in the art to refer to the particular item used in a door handle assembly that is mounted in an operator (e.g., door knob) to actuate a lock mechanism. However, clearly a turn-button is not a key that would be received in a keyway. Thus, the key 200 of Liu is not a turn-button, as recited in claim 1.

Most any house or apartment has an interior door, such as a bedroom or bathroom door, that includes a turn-button. It is well known in the art that the Liu key 200 is not mounted to the Liu lock 100, but rather is removably received in the keyways 112 such that the user can freely insert and remove the key from the keyway (see Liu column 4, lines 60-64). It is also well known in the art that a turn-button, sometimes also referred to in the art as a turn-piece, is mounted in the operator (e.g., door knob), such that a user cannot remove the turn-button. Notwithstanding, for clarification on this point, claim 1 was previously amended to recite that the turn-button is mounted in the operator "during assembly of said lockset".

Further, the patents 5,361,614; 5,140,843 and 3,630,053 referenced by the Examiner show that in rare situations, a key may be inserted into a keyway and made permanent with the lock (e.g., solder, weld or mechanical retainer). Notwithstanding, the key must be inserted into the keyway of the lock mechanism, and thus is still functioning as a key. Further, the Examiner's assertion misses the point, in that such a permanent attachment is not what is disclosed in Liu, nor would it be consistent with the teaching in

Liu, as the key in Liu upon which the Examiner relies in rejecting Appellant's claims, always functions as a removable key.

In the Final Office Action at page 5 (Response to Arguments first paragraph), in response to the amendment of claim 1 to recite, "a turn-button mounted in said operator during assembly of said lockset, said turn-button including..." (emphasis added), the Examiner states with respect to Liu that if the prior art is capable of performing the intended use, then it meets the claim. However, the key in Liu (1) always functions as a removable key, and thus is not a turn-button as the term is used in the present application, (2) is not "mounted" in the operator, and (3) the removable key of Liu is not mounted during assembly of the lockset.

It is respectfully submitted that the Examiner's assertion that Liu is "capable" of such a mounting is a tortured interpretation of Liu that is unsupported by Liu, and as such are exaggerations in Liu structures that are purely based on speculation and assumption, which is improper. The Examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. *In re Warner*, 154 U.S.P.Q. 173,178 (CCPA 1967); emphasis added.

Attention is drawn to Liu Fig. 2B, that shows keyways 112 into which the spiraling key blades are inserted, and tumbler bores 120 for receiving the lock tumblers (not shown) which would be displaced by the spiraling key blade when the spiraling key blade is inserted into keyways 112. Considering the complexity of the Liu spiraling key blade/spiraling keyway configuration (see Liu Figs. 1, 2A and 2B), it simply does not follow that someone would then permanently attach the spiraling key blades in the



spiraling keyways, as such would be a gross waste of manufacturing effort, and thus one skilled in the art would not be motivated to do so.

Liu discloses a removable key that is never mounted to an operator at any time, either during or after assembly of the lock into which the key is removably inserted.

In the Final Office Action at page 6 (Response to Arguments paragraph 3), the Examiner states, “In regards to the argument that Liu does not disclose a shaft” one with ordinary skill in the art would recognize that the “key blades are also known as shafts or shanks.” Appellant first clarifies that the Examiner asserted at page 3 of the Final Office Action that it is blade portion 230 of Liu that constitutes a shaft, and thus Appellant takes issue with the characterization that the spiraling blade portion 230 of Liu constitutes a shaft or shank.

Liu discloses that the key 200 (see, e.g., Liu Figs. 1 and 3) expressly includes a shaft or “shank” in the form of “a shank 210” (see, e.g., Liu column 5, lines 34-45), and shank 210 is distinctly separate from the blade portion 230. (See Liu Fig. 3). Also, it is the blade portion 230, and not shank 210, which includes helical blades (see Liu, column 5, lines 63-66; see also, Liu, Fig. 5). Further, Liu expressly identifies the structures of Liu Figs. 6A-6D as alternative structures for the “helical key blades” (Liu column 6, lines 51-67) e.g., blades 236’ (Fig. 6A), 236” (Fig. 6B), 236''' (Fig. 6C), and blades 236'''' and 236b'''' (Fig. 6D). With respect to the embodiments of Liu Figs. 6A and 6C, it is stated that “the key may have only one helical key blade” (Liu, column 6, lines 58-60). Thus, the Examiner’s assertion that the helical blade portion 230 of Liu is a shaft or shank simply is inconsistent with the clear teaching of Liu having “shank 210”.

In addition, and in view of the term “shank” as used in Liu to describe the elongate rod portion 210 of key 200, the spiraling key blade 236” shown in Liu Fig. 6C does not constitute what one skilled in the art would consider as being a “shaft” or “shank”, nor does Liu support such a contention. Rather, Liu describes the spiraling element 236” as a helical key blade having an elongated rectangular cross section (Liu column 6, lines 52-64), and references element 210 as being “shank 210”.

Accordingly, Liu does not disclose, teach or suggest the subject matter of claim 1.

For at least the reasons set forth above, Appellant respectfully submits that claim 1 is not anticipated by Liu under 35 U.S.C. § 102(e), and is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 1 as being anticipated by Liu under 35 U.S.C. §102(e).

### 3. CLAIM 2 IS PATENTABLE

Claim 2 depends from claim 1, and is patentable in view of its dependence on a patentable base claim. In addition, claim 2 is patentable in its own right.

Claim 2 recites, in part, “said leading helical end portion having a plurality of leading helical surfaces that taper and twist from a transition line of said shaft toward a tip end of said shaft.” (Emphasis added). In rejecting claim 2, the Examiner relies on Liu Fig. 6C.

In the Final Office Action at page 6 (Response to Arguments paragraph 4), the Examiner asserts that as shown in Liu Fig. 6, “the helical surfaces taper towards a center, transition line (axial center line of the shaft), and end at the end of the shaft.” This statement is a mischaracterization of Liu Fig. 6, but in any event, deviates from the claim

language in a material way. Claim 2 recites that the plurality of leading helical surfaces taper and twist from a transition line of *said shaft* toward a tip end of *said shaft*.

However, in rejecting claim 1 from which claim 2 depends, the Examiner relies on the key blade portion 230 as corresponding to the recited “shaft”, and the helical key blade 236''' as corresponding to the recited “leading helical tip”.

While the surfaces of helical key blade 236''' spiral, the surfaces of helical key blade 236''' do not taper from a transition line of the shaft toward a *tip end* of the shaft. As stated in Liu in relation to Fig. 6C, the key blade 236''' is of elongated rectangular cross section (Liu column 6, lines 62-64), and as shown in Fig. 6C, uniformly spirals around a central axis while maintaining the diameter of the spiral (necessarily so since it must be configured to follow the spiral keyway(s), e.g., 112; see also Liu Fig. 2B), and thus does not taper.

Accordingly, Liu does not disclose, teach or suggest the subject matter of claim 2.

For at least the reasons set forth above, Appellant respectfully submits that claim 2 is not anticipated by Liu under 35 U.S.C. § 102(e), and is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 2 as being anticipated by Liu under 35 U.S.C. §102(e).

#### **4. CLAIM 3 IS PATENTABLE**

Claim 3 depends from claim 2, and is patentable in view of its dependence on a patentable base claim 1 and/or patentable intervening claim 2.

In addition, claim 3 is patentable in its own right. Claim 3 recites, in part, “said plurality of leading helical surfaces smoothly transition between adjacent helical surfaces.” (Emphasis added).

In the Final Office Action at page 6 (Response to Arguments paragraph 5), the Examiner asserts that Liu Fig. 6C shows “inner surfaces of the helical transition between the distinct helical surfaces with smooth continual webs absent of any abrupt stops or jagged edges, and thus a smooth transition between helical surfaces”. The Examiner’s assertion, however, is erroneous.

The embodiment of Liu Fig. 6C is expressly described as having “only one helical key blade” (Liu, column 6, lines 58-60). As further stated in Liu in relation to Fig. 6C, the key blade 236’” is of elongated rectangular cross section (see Liu column 6, lines 62-63). Being a single blade having rectangular cross section, the key blade 236’” of Liu Fig. 6C has four surfaces, and as is clearly shown in Fig. 6C, as between any two adjacent surfaces, the transition is abrupt, essentially at 90 degrees from one another since the cross section is rectangular. Other embodiments in Liu (e.g., helical key blades 236”) have a round cross section (and thus have a single outer surface with no transition) or have a polygonal cross section also with abrupt transitions as between surfaces. (See Liu column 6, lines 51-64).

Accordingly, Liu does not disclose, teach or suggest the subject matter of claim 3 wherein the plurality of leading helical surfaces smoothly transition between adjacent helical surfaces.

For at least the reasons set forth above, Appellant respectfully submits that claim 3 is not anticipated by Liu under 35 U.S.C. § 102(e), and is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 3 as being anticipated by Liu under 35 U.S.C. §102(e).

## **5. CLAIM 4 IS PATENTABLE**

Claim 4 recites, “A turn-button for a lockset, comprising: a head portion; and a shaft extending from said head portion, said shaft having a leading helical end tip.”

Liu does not disclose a turn-button for a lockset, having a head portion and a shaft extending from said head portion, the shaft having a leading helical end tip, for reason set forth above with respect to claims 1 and 2.

Accordingly, Liu does not disclose, teach or suggest the subject matter of claim 4.

For at least the reasons set forth above, Appellant respectfully submits that claim 4 is not anticipated by Liu under 35 U.S.C. § 102(e), and is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 4 as being anticipated by Liu under 35 U.S.C. §102(e).

## **6. CLAIM 5 IS PATENTABLE**

Claim 5 depends from claim 4, and is patentable in view of its dependence from base claim 4.

In addition, claim 5 recites, “The turn-button of claim 4, said leading helical end tip having a plurality of leading helical surfaces that taper and twist from a transition line of said shaft toward a tip end of said shaft.”

Accordingly, claim 5 is patentable in its own right for substantially the same reasons set forth above with respect to claim 2.

For at least the reasons set forth above, Appellant respectfully submits that claim 5 is not anticipated by Liu under 35 U.S.C. § 102(e), and is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 5 as being anticipated by Liu under 35 U.S.C. §102(e).

## **7. CLAIM 6 IS PATENTABLE**

Claim 6 depends from claim 5, which in turn depends from claim 4, and is patentable in view of its dependence from base claim 4 and/or intervening claim 5, for reasons set forth above with respect to claims 4 and/or 5.

In addition, claim 6 recites, “The turn-button of claim 5, wherein said plurality of leading helical surfaces smoothly transition between adjacent helical surfaces.”

Accordingly, claim 6 is patentable in its own right for substantially the same reasons set forth above with respect to claim 3.

For at least the reasons set forth above, Appellant respectfully submits that claim 6 is not anticipated by Liu under 35 U.S.C. § 102(e), and is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 6 as being anticipated by Liu under 35 U.S.C. §102(e).

## **8. CLAIM 8 IS PATENTABLE**

Claim 8 is patentable in view of its dependence from patentable claim 1, and for reasons set forth above with respect to claim 1.

For at least the reasons set forth above, Appellant respectfully submits that claim 8 is not anticipated by Liu under 35 U.S.C. § 102(e), and is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 8 as being anticipated by Liu under 35 U.S.C. §102(e).

## **9. CLAIM 9 IS PATENTABLE**

Claim 9 recites, “A lockset comprising: a lock mechanism including an actuator having an aperture; an operator; a turn-button mounted in said operator, said turn-button including a shaft; and means for facilitating self-alignment of said shaft of said turn-button

with said aperture of said lock mechanism as said shaft of said turn-button is inserted into said aperture of said lock mechanism, said means including a plurality of leading helical surfaces that taper and twist from a transition line of said shaft toward a tip end of said shaft.”

Liu does not disclose, teach or suggest a turn-button as recited in claim 9 for substantially the same reasons set forth above with respect to claim 1 and/or claim 2.

In addition, claim 9 recites, “means for facilitating self-alignment of said shaft of said turn-button with said aperture of said lock mechanism ....” In the Final Office Action at page 6 (Response to Arguments paragraph 6), the Examiner asserts that, “The spiral design of the shaft of Liu can only be inserted in a proper way, and thus due to congruent shapes of the shaft and aperture, the turn-button self-aligns to correctly unlock the lock mechanism.” Appellant respectfully disagrees.

In rejecting claim 9, reliance is placed by the Examiner on Liu column 7, lines 19-24, which state, “In an open-lock operation, the protrusion 216 of the key is firstly inserted into the positioning slot 114 provided in the center of the front end of the lock core 110 for positioning and facilitating insertion of the key. Each end of the helical key blade is then aligned with the entry of the keyway.” While the passage relied on by the Examiner has to do with alignment, such alignment is performed by the protrusion 216 of shank 210, which does not include the helical blades 236 (Liu Fig. 3). Claim 9 expressly recites that the “means for facilitating self-alignment” includes “a plurality of leading helical surfaces ....”

Thus, claim 9 is patentable for this additional reason as well.

For at least the reasons set forth above, Appellant respectfully submits that claim 9 is not anticipated by Liu under 35 U.S.C. § 102(e), and is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 9 as being anticipated by Liu under 35 U.S.C. §102(e).

#### **10. CLAIM 10 IS PATENTABLE**

Claim 10 depends from independent claim 9. Claim 10 is patentable in view of its dependence from patentable base claim 9.

In addition, claim 10 recites, “The lockset of claim 9, wherein said plurality of leading helical surfaces smoothly transition between adjacent helical surfaces.” The subject matter of claim 10 corresponds generally to that of claim 3, and thus is patentable in its present form for substantially the same reasons set forth above with respect to claim 3.

For at least the reasons set forth above, Appellant respectfully submits that claim 10 is not anticipated by Liu under 35 U.S.C. § 102(e), and is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 10 as being anticipated by Liu under 35 U.S.C. §102(e).

#### **11. CLAIMS 12-16 AND 20 ARE PATENTABLE**

Claims 12-16 and 20 depend, directly or indirectly, from independent claim 1. Claims 12-16 and 20 are patentable in view of their dependence from patentable base claim 1, and for reasons set forth above with respect to claim 1.

For at least the reasons set forth above, Appellant respectfully submits that claims 12-16 and 20 are not anticipated by Liu under 35 U.S.C. § 102(e), and that each is patentable in its present form.



Accordingly, Appellant respectfully requests that the Board reverse the rejection of claims 12-16 and 20 as being anticipated by Liu under 35 U.S.C. §102(e).

## **12. CLAIMS 18 AND 19 ARE PATENTABLE**

Claims 18 and 19 depend from independent claim 9. Claims 18 and 19 are patentable in view of their dependence from patentable base claim 9, and for reasons set forth above with respect to claim 9.

For at least the reasons set forth above, Appellant respectfully submits that claims 18 and 19 are not anticipated by Liu under 35 U.S.C. § 102(e), and that each is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claims 18 and 19 as being anticipated by Liu under 35 U.S.C. §102(e).

## **B. CLAIMS 11 AND 17 ARE PATENTABLE OVER LIU (U.S. PATENT NO. 6,925,844) IN VIEW OF HURDLE (U.S. PATENT NO. 842,834) UNDER 35 U.S.C. 103(a)**

In the Final Office Action, claims 11 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Liu (U.S. Patent No. 6,925,844) in view of Hurdle (U.S. Patent No. 842,834).

“A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. §103(a).

As set forth below, Appellant submits that claims 11 and 17 are patentable over Liu in view of Hurdle under 35 U.S.C. §103(a).

### **1. LIU (U.S. PATENT NO. 6,925,844)**

Liu is described above in Section VIII(A)(1), and for brevity will not be repeated here.

### **2. HURDLE (U.S. PATENT NO. 842,834)**

Hurdle discloses a knob-lock having a cylinder (m) with a spiral keyway (y). (Hurdle, lines 101-104). A counterpart spiral key (s) is inserted into keyway (y) to raise ward-pin (n). (Hurdle, lines 105-108). Lock cylinder (m) extends to the outside of the door knob (r). (Hurdle, Fig. 1).

### **3. CLAIM 11 IS PATENTABLE**

Claim 11 depends from claim 1 and is patentable in view of its dependence from patentable base claim 1, since Hurdle does not overcome the deficiencies of Liu with respect to claim 1.

In addition, claim 11 is patentable in its own right.

Claim 11 recites, “The lockset of claim 1, wherein said operator is one of a door knob and a door lever, said shaft of said turn-button extending from said head portion through said one of said door knob and said door lever to engage said aperture of said lock mechanism.” In rejecting claim 11, the Examiner asserts that claim 11 is obvious as a combination of the Liu locking assembly, e.g., lock cylinder having helical keyways 112 in Liu that is contained in the lock shell 102 in Liu, with the door knob of Hurdle.

Claim 11 recites with respect to base claim 1 that the operator is one of a door knob and a door lever, and it is the shaft of the turn-button that extends from the head portion of

the turn-button through the door knob (or door lever) to engage the aperture of the lock mechanism. In particular, the Examiner has asserted that key 200 of Liu corresponds to the recited “turn-button”, key blade portion 230 as corresponding to the recited “shaft”, and helical key blades 236 as corresponding to the recited “leading helical tip”. In Hurdle, it is the lock cylinder (m) that extends to the outside of the door knob. Thus, even if combined (although Appellant maintains it would not be obvious to do so), the key 200 of Liu would engage the lock cylinder (m) of Hurdle, and thus would not provide a configuration of “said shaft of said turn-button extending from said head portion through said one of said door knob and said door lever to engage said aperture of said lock mechanism.”

Accordingly, to achieve the invention as recited in claim 11 by the combination of Liu in view of Hurdle, significant change in the structure and function of the combined elements of Liu and Hurdle would have been required. Thus, for reasons set forth above, the improved structure provided by the present invention over that of Liu in view of Hurdle is more than the predictable use of the elements of Liu and Hurdle according to their established functions. See *KSR International Co. v. Teleflex Inc. (KSR)*, 127 S. Ct. 1727, 82 USPQ2d 1385, 1396 (2007).

Thus, claim 11 is patentable in its own right.

For at least the reasons set forth above, Liu in view of Hurdle do not render obvious the subject matter of claim 11 under 35 U.S.C. §103(a). Thus, Appellant submits that claim 11 is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 11 as being unpatentable over Liu in view of Hurdle under 35 U.S.C. §103(a).

#### **4. CLAIM 17 IS PATENTABLE**

Claim 17 depends from claim 9 and is patentable in view of its dependence from patentable base claim 9, since Hurdle does not overcome the deficiencies of Liu with respect to claim 9.

In addition, the subject matter of claim 17 corresponds to that of claim 11, and thus is patentable in its own right for substantially the same reasons set forth above with respect to claim 11.

Thus, Liu in view of Hurdle do not render obvious the subject matter of claim 17 under 35 U.S.C. §103(a). Thus, Appellant submits that claim 17 is patentable in its present form.

Accordingly, Appellant respectfully requests that the Board reverse the rejection of claim 17 as being unpatentable over Liu in view of Hurdle under 35 U.S.C. §103(a).

#### **C. CONCLUSION**

For the foregoing reasons, Appellant submits that now pending claims 1-6 and 8-20 are patentable in their present respective forms. Accordingly, Appellant respectfully requests that the Board reverse the final rejections of claims 1-6 and 8-20.

In the event Appellant has overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Appellant hereby conditionally petitions therefor and authorizes that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Respectfully submitted,

/Ronald K. Aust, Reg. No. 36735/

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**IX. CLAIMS APPENDIX**

1. A lockset, comprising:  
a lock mechanism having an aperture;  
an operator; and  
a turn-button mounted in said operator during assembly of said lockset, said turn-  
5 button including:  
a head portion; and  
a shaft extending from said head portion, said shaft having a leading helical end  
portion that engages said aperture of said lock mechanism.  
  
2. The lockset of claim 1, said leading helical end portion having a plurality of  
leading helical surfaces that taper and twist from a transition line of said shaft toward a tip end  
of said shaft.  
  
3. The lockset of claim 2, wherein said plurality of leading helical surfaces smoothly  
transition between adjacent helical surfaces.  
  
4. A turn-button for a lockset, comprising:  
a head portion; and  
a shaft extending from said head portion, said shaft having a leading helical end tip.

5. The turn-button of claim 4, said leading helical end tip having a plurality of leading helical surfaces that taper and twist from a transition line of said shaft toward a tip end of said shaft.

6. The turn-button of claim 5, wherein said plurality of leading helical surfaces smoothly transition between adjacent helical surfaces.

7. (Canceled)

8. The lockset of claim 1, said lock mechanism including a rotatable actuator having said aperture, wherein once said leading helical end portion engages said aperture, a rotation of said turn-button effects a corresponding rotation of said rotatable actuator of said lock mechanism.

9. A lockset comprising:

a lock mechanism including an actuator having an aperture;

an operator;

a turn-button mounted in said operator, said turn-button including a shaft; and

5 means for facilitating self-alignment of said shaft of said turn-button with said aperture of said lock mechanism as said shaft of said turn-button is inserted into said aperture of said lock mechanism, said means including a plurality of leading helical surfaces that taper and twist from a transition line of said shaft toward a tip end of said shaft.

10. The lockset of claim 9, wherein said plurality of leading helical surfaces smoothly transition between adjacent helical surfaces.

11. The lockset of claim 1, wherein said operator is one of a door knob and a door lever, said shaft of said turn-button extending from said head portion through said one of said door knob and said door lever to engage said aperture of said lock mechanism.

12. The lockset of claim 1, wherein a rotation of said turn-button effects a corresponding rotation of said aperture of said lock mechanism.

13. The lockset of claim 1, wherein said aperture of said lock mechanism has a substantially rectangular shape.

14. The lockset of claim 2, wherein a number of said plurality of leading helical surfaces is greater than two.

15. The turn-button of claim 4, wherein a perimeter of an elongate portion of said shaft has a substantially rectangular shape.

16. The turn-button of claim 5, wherein a number of said plurality of leading helical surfaces is greater than two.

17. The lockset of claim 9, wherein said operator is one of a door knob and a door lever, said shaft of said turn-button extending through said one of said door knob and said door lever to engage said aperture of said lock mechanism.



18. The lockset of claim 9, wherein said aperture of said lock mechanism has a substantially rectangular shape.

19. The lockset of claim 9, wherein a number of said plurality of leading helical surfaces is greater than two.

20. The lockset of claim 1, wherein said leading helical end portion forms a plurality of side surfaces of said shaft.

21. (Canceled)

**X. EVIDENCE APPENDIX**

Included herein, and listed below as Exhibits A and B, is a copy of each reference upon which the Examiner relied in rejecting one or more of the claims of the present application.

**Exhibit:**

- A. U.S. Patent No. 6,925,844 (Liu)
- B. U.S. Patent No. 842,834 (Hurdle)

Included herein, and listed below as Exhibits C-E, is a copy of each reference upon which the Examiner relied in support of the proposition that keys are used as permanent turn-buttons or turn pieces.

**Exhibit:**

- C. U.S. Patent No. 3,630,053
- D. U.S. Patent No. 5,140,843
- E. U.S. Patent No. 5,361,614

Included herein, and listed below as Exhibits F-K, is a copy of each reference Appellant uses to show that which is well known in the art to be a turn-button/turnpiece.

**Exhibit:**

- F. U.S. Patent No. 4,631,944
- G. U.S. Patent No. 5,317,889
- H. U.S. Patent No. 5,335,950
- I. U.S. Patent No. 5,441,318
- J. U.S. Patent No. 6,598,440
- K. U.S. Patent No. 6,745,602

**XI. RELATED PROCEEDINGS APPENDIX**

**(No Entries)**